

# Products...Target...Strategy

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## 1. Strategy

The One-VA Target Architecture is a business driven vision that is intended to describe the future state of VA's business processes, and VA's application of technology to meet business objectives and service objectives to veterans. It is focused at a five to seven year planning horizon.

This One-VA Target Architecture Strategy identifies the principles, objectives, vision, and structure of the One-VA Target Architecture.

### 1.1. Target Architecture Principles

The One-VA EA architectural principles establish the first criteria and related decision-making guidance for designing and developing information systems.

- The One-VA EA is a single, Department-wide architecture; which may implement and support business-line-specific segment architectures to address the specific needs of certain business areas; however, the individual segment architectures will be defined and approved at the One-VA Enterprise Architecture level, and segment architecture differences will not impede data and component sharing across the enterprise.
- The One-VA EA must be compliant with the law as expressed in legislative mandates, executive orders, and other Federal regulations, and guidelines. Changes in law may drive changes in architectural processes or applications, independent of the internal governance of the architecture.
- The target architecture will align and support the VA strategic plan. As the strategic plan changes, so does the future business environment of VA and the target architecture.
- As a component of strategic planning and change management, the target architecture captures the future environment including data requirements and systems transitions. The Target Architecture Transition Plan and Sequencing Plan provide VA's guide to achieve the target state.
- The target architecture will need to be revised and updated regularly. The transition plan and sequencing plan will continually reflect a five to seven year planning horizon. Target architecture planning will continually be extended into the future as portions of the planned architecture are achieved.
- Commonality improves interoperability, cost efficiency, and convergence. The architecture must encourage the use of standard business practices, common technologies, reusable data, sharable services and components, and where possible, standard e-Gov and PMA-LOB solutions in order to optimize service and to avoid wasteful, redundant investment.
- The business domain owners are the responsible managers of specific business areas; they are the authoritative source for business requirements and for determining the value of service improvement to veterans. Development of the architecture is an iterative,

continuous-improvement process of information collection and conclusion validation for business domain owners and subject matter specialists.

- Information is an enterprise asset, which should be shared across business domains and should be perfected by communities of interest, taken from those enterprise business domains. The architecture should develop and nurture communities of interest, among VA business leadership to assure proper management and development of information assets as shared entities.
- To ensure interoperability across the enterprise infrastructure, technologies must be carefully selected for compatibility. VA will adopt standards based technologies and products in areas where standards have matured; and VA will apply broadly accepted proprietary technologies in areas where these technologies predominate and where standards have not been developed.
- The target architecture will be achieved through a process of investment review and appraisal and a process of innovative project recommendation. The One-VA EA project milestone review is an integral component of the IT investment process.
- The One-VA architecture will fully support and encourage the implementation of the VA Cyber-Security and Privacy Programs.

## **1.2. Target Architecture Mission Statement**

The mission of VA's Target Enterprise Architecture is to articulate a direction in, and foster implementation of IT investments that: support the mission and strategic goals of VA; that improve service to veterans; that enforce economical investment and asset management; and that exploit technological innovation.

## **1.3. Target Architecture Goals and Objectives**

The Target Architecture provides the following goals and objectives in support of this mission statement.

Goal-1: Improve the quality and flexibility of VA's service to veterans, and other stakeholders.

- Objective-1.1: Provide flexible, alternative methods, locations and timeframes for veterans to contact and complete business with VA;
- Objective-1.2: Provide veteran and other stakeholders with self-service options;
- Objective-1.3: Advance telemedicine to improve timeliness and quality of care for veterans and maximize remote provider consultation;
- Objective-1.4: Provide consistent and correct information to veteran's inquiries;
- Objective-1.5: Provide contact opportunities for veterans in remote locations;
- Objective-1.6: Provide contact opportunities for veterans with disabilities;
- Objective-1.7: Provide contact opportunities for homeless veterans

Goal-2: Assure the accuracy and completeness of VA's Information resources.

- Objective 2.1: Eliminate duplication in information gathering and storage
- Objective 2.2: Develop enterprise-level information standards and definitions
- Objective 2.3: Share information across VA business lines and Departments
- Objective 2.4: Involve business stakeholders in information governance

Goal-3: Reduce the complexity of VA's IT infrastructure

- Objective 3.1: Provide technical "Pattern" configurations and solutions to eliminate unnecessary custom engineering;
- Objective 3.2: Apply PMA e-gov and LOB solutions where they are available and suitable;
- Objective 3.3: Build sharable component-based solutions where COTS or PMA solutions do not apply and eliminate redundant IT development;
- Objective 3.4: Assure that VA systems are extensible, scalable, adaptable, maintainable, reliable, secure, and standard-based.
- Objective 3.5: Reduce VA registration processes to one common business process served by one common IT system and one Identity management database.

Goal-4: Optimize the efficiency of VA's business operations.

- Objective 4.1: Assure that business processes are re-engineered in conjunction with and before developing new technology solutions.
- Objective 4.2: Involve business stakeholders in the evolution of the enterprise architecture and in the selection and/or development of IT solutions.
- Objective 4.3: Periodically review and evaluate business process efficiency at business stakeholders' request.

Goal-5: Exploit advances in technology to achieve VA's objectives.

- Objective 5.1: Periodically review emerging technologies and identify those with potential benefits for VA.
- Objective 5.2: Provide guidance for relevant, emerging technologies through the VA TRM/SP.
- Objective 5.3: Advance portfolio recommendations to achieve target architecture components through appropriate technology advances.

## **1.4. Target Architecture Vision**

VA's ultimate target architecture will provide a highly versatile fabric of reusable IT process components and shared information that can be recombined in various ways to meet VA's evolving business and veteran service needs. VA will extend this component architecture paradigm to include its government partners (such as DoD, HHS and SSA) to assure that major investments in information are consistent and reusable across Departments. VA will evolve this target architecture concept to incorporate the following features:

1. Wherever possible, access to VA services and products, both internal and external will be available, in addition to other methods, by self-service means, across telephone, the Internet and the VA Intranet. This will greatly enhance veteran's access to the VA in places and at times that are convenient to the veteran.
2. All critical business information and data will be corporately owned in a conceptual Enterprise Data Layer (EDL). Business information will be maintained through business-focused communities of interest, and will be appropriately shared, across business lines from common, non-redundant data stores, through standard well-defined interface techniques. This includes:
3.
  - Identity Management, Service History and Demographic Information;
  - Health and Medical Treatment information;
  - Financial and Logistics Information; and
  - Facilities Management and Capital Asset Inventory Information.
4. As VA's stove-piped systems are replaced over time, the underlying business processes for these systems will be re-engineered and optimized to avoid duplication and to streamline service to veterans. Obsolete legacy systems will be replaced with PMA e-Gov or LOB solutions, where these solutions are available, and with internally developed, sharable-component-based solutions, where new systems have to be developed.
5. VA's IT infrastructure will continue to evolve into a fully network centric, shared resource, in which facilities are optimized for overall shared utilization by all VA sites and business lines, without wasteful internal duplication.
6. System development will be simplified around a series of core technologies and FEA-LOB solutions that will improve interoperability and will reduce the risk of unrecognized or unaddressed security vulnerabilities. This will enhance VA's ability to protect veteran information and interests.
7. Security and privacy countermeasures will be engineered and integrated into every layer of this fabric.

These features are summarized within the target architecture Logical Model in Figure 1.1

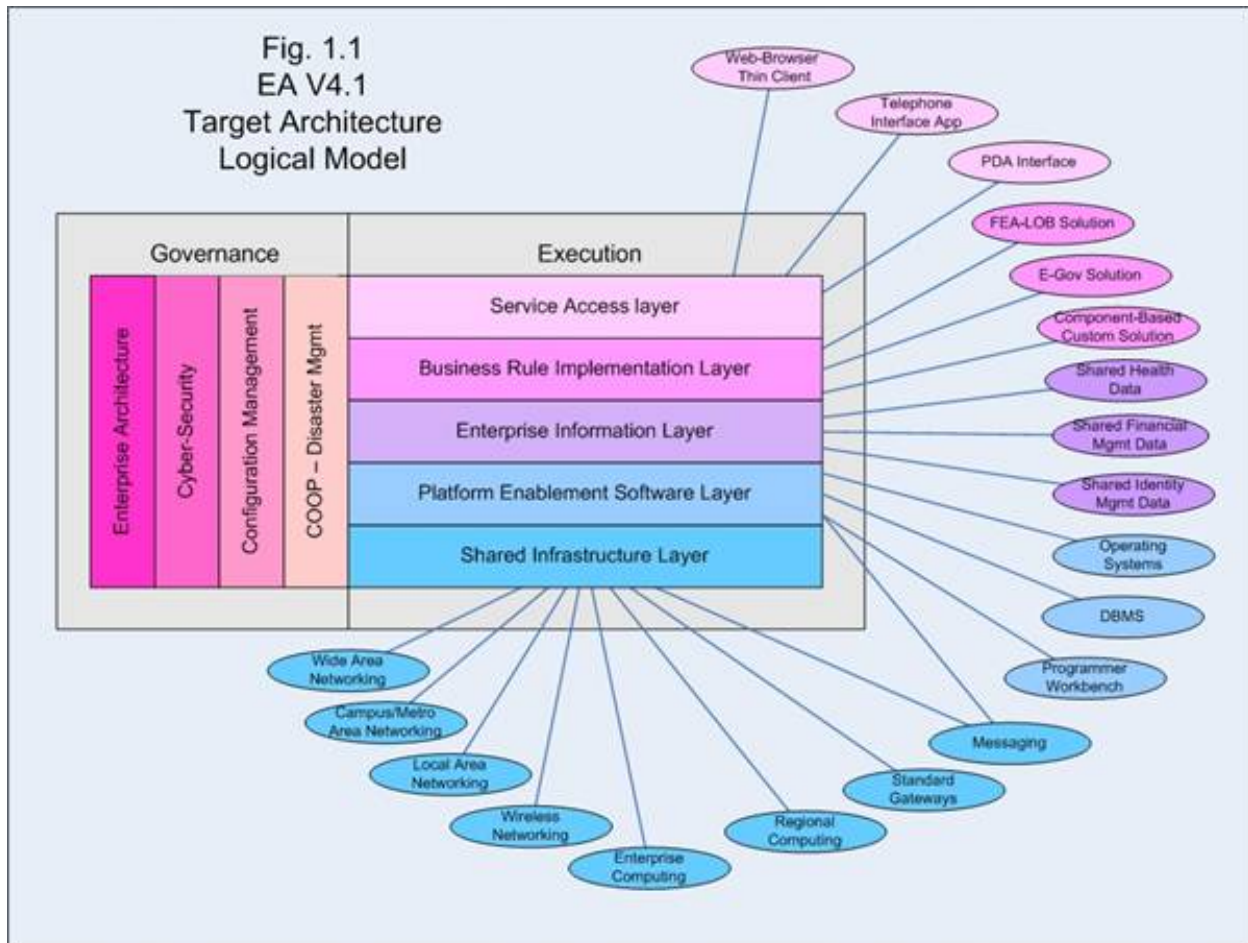


Fig 1.1 Target Architecture Logical Model

## 1.5. Target Architecture Structure

The Target architecture consists of portfolio projects that are just completing, or currently underway, as well as projects in planning and projects contemplated for the near future. These projects are organized into the five layers identified in the Target Architecture Logical Model.

These five layers are described directly below. Additionally the four governance disciplines (Enterprise Architecture, Cyber security, Configuration Management, and COOP disaster Management), identified within the Target Architecture Logical Model are applied throughout the design and development of all projects within each layer.

### 1.5.1. Shared Infrastructure Layer

This Target Architecture layer describes the facilities, hardware and network infrastructure that support IT operations and services. It includes the VA Intranet, with its external gateways, firewalls, DMZs, server complexes, data centers, and client workstation networks. Several key transformations to VA's Shared infrastructure layer are being completed within this year, and others are underway.

At this time, the following projects are being implemented:

- The telecommunications modernization plan (TMP) has completed Milestone-4. This system is fully deployed, and it currently provides centrally managed and monitored Wide Area Network telecommunications services across VA's Intranet.
- VA's Integrated Security Program has eliminated 120 independent external network gateways across the intranet with a system of six standardized, firewalled, and centrally monitored external network gateways, under configuration management, for general VA use. Standardized, centrally-monitored DMZ configurations are also in place to protect critical data and processes from network intrusion;
- Centralized network intrusion detection and remediation services are provided by a Security Operations Center that is integrated with the Network Operations Center and with a cadre of local, certified Information security officers (ISOs) to provide uniformly managed rapid response to external threats;
- Activities are progressing to integrate and standardize COOP and disaster recovery capabilities between VA's three corporate data centers;
- VA's Exchange Consolidation Program is in the process of consolidating hundreds of de-centralized Microsoft Exchange messaging servers into 26 regional locations, in phase-1 of a two-phase program. Eventually this program will result in all messaging being managed from six locations. The Exchange Consolidation has also standardized email addressing conventions across the enterprise;
- VA's Wide-Band radio frequency transition program is actively integrating VA's emergency response radio network from wide-band analog to narrow-band digital transmission by the federally mandated dates.

Additional, new initiatives are beginning which will increase VA's ability to provide centrally managed, standardized core services across the enterprise:

- The Enterprise Telephony Initiative is analyzing the feasibility and benefits of providing Voice over IP services across the VA Intranet;
- The VA IPV6 Transformation Project plans to provide complete IPV6-compatibility across the VA Intranet before September 2008. IPV6 will provide expanded application functionality, user authentication and user location capabilities;
- The Regional Computing Initiative is planning to consolidate the more sophisticated local

computing services into regional data centers. This will reduce cost by consolidation critical skill sets in a reduced number of locations.

### **1.5.2. Platform Enablement Software Layer**

This Target Architecture layer consists of the operating system software, DBMS software, network operating system software, and related COTS products, required to exploit and control the capabilities of VA's infrastructure. Projects underway within this layer include:

- During 2004, VA eliminated the last of its Windows legacy desktop operating environments; Today approximately 44 percent of VA's 220,000 windows workstations have been upgraded to the Windows-XP version, with the remainder scheduled for conversion between now and September 2006;
- VA's Windows server population is currently being upgraded from the Win-2000-Server to the Win-2003 operating system. This activity is part of normal operation and maintenance and is not represented by a separate capital investment;
- VA is also in the process of assuring that its NOS network component operating system install-base is capable of supporting the IPV6 (as well as the IPV4) service stack;
- VA's use of the PCHS-III commodity purchase contract and the GSA SmartBuy program will standardize COTS software license acquisition and maintenance renewal, eliminate software license duplication, and minimize software acquisition cost, while reducing the administrative overhead in software license procurement.

### **1.5.3. Enterprise Information Layer**

Several projects are underway to standardize information across VA, and to create sharable common data stores for general use by all business lines:

- The Registration & Eligibility program is developing the requirements for a single authoritative source of identity management, demographic and service history data for use by all VA business lines, through a common sharable data store;
- The Health Data Record (HDR) project is creating a standardized, sharable electronic health data record which will be shared across VISNs to make veteran health information available at any VA facility where the veteran may appear to receive services;

Other VA projects are standardizing information shared by VA and other government Departments:

- Working with the DoD/JR&IO (Joint Requirements & Integration Office), VA is substantially reducing the number of independent data feeds passed between DoD and VA and will reduce this traffic to one feed in each direction;
- The DoD/VA Benefits Executive Council has developed plans for modifying or replacing VA legacy systems to receive veteran identification information from a single authoritative



source; these projects will appear in the BY-2008 portfolio.

- The Bidirectional Health data record (BHIE) and Federal Health Data record (FHIE) projects are standardizing health information definition across VA and DoD;
- Under the CDR/HDR interoperability initiative, the DoD and VA are developing sharable software components that will permit the DoD Composite Health Care System (CHCS II) and the VA/HealtheVet to exchange clinical data so that both DoD and VA beneficiaries receive seamless care.
- The VA Health Language Version-7 (HL7) Initiative keeps VA's approach to health information definition and recording in line with the industry HL7 standard, and assures that VA remains at the vanguard of clinical information systems.

VA's data Architecture service, under the office of Enterprise Architecture Management, is developing a data registry and data definition governance process that will regulate the creation of data definitions, properties and attributes, and through communities of interest, will enforce data sharing and reuse across the Department:

- This program is currently developing a pilot, involving identity management and veteran demographics data.

#### **1.5.4. Business Rule Implementation Layer**

When contemplating the replacement of an existing system, or the creation of a new system, VA first assures that the supported business process has been re-engineered for efficiency and effectiveness. Then VA attempts to find an existing capability, such as an FEA e-gov or FEA-LOB solution that can fulfill the requirement. If a solution is not readily available, VA will develop a new system from sharable, reusable components. The following elements of the business-rule implementation layer are currently in development:

- VA's new government employee travel support system, launched in this budget year, is an implementation of the PMA e-travel solution;
- VA will deploy an enterprise-level employee-training management system by January 2007. This system is an implementation of the PMA e-Training solution, it replaces a variety of stove-piped legacy training systems;
- VA's replacement payroll system, scheduled to deploy in January 2008 is an implementation of the PMA e-payroll solution, it will support VA's Title-5 and Title-38 employees;
- VA's Registration Eligibility initiative is collecting requirements to develop a common registration information collection system which will support all VA business lines;
- VA V4.1 recommends that VA launch an enterprise-wide Electronic Records Management initiative, utilizing the PMA e-Records Management solution.

#### **1.5.5. Service Access Layer**

VA's current information delivery standard calls for a three tiered Java-based thin-client development strategy that requires only a generic web-browser on the client-system to complete the user interface.

- VA is currently standardizing the look and feel and configuration management methodology for all VA web activity;
- VA has a strict policy in place, supported by a testing lab, to assure that all VA web products are Section-508 compliant for accessibility.
- Another VA-wide initiative will standardize Web content management across the enterprise.

During the next cycle of the EA, VA will extend its development of a component-based architecture by identifying common web services with corresponding standard interfaces that can be acquired or developed as sharable, reusable components. These components will be documented in VA's shareable component registry and will be used in the future development of sharable component-oriented web applications, across all VA business lines. Some typical areas for sharable component exploitation include:

- Web-site Search Functions;
- Application Access Services;
- Web Content Management Services

## **1.6. Target Architecture Implementation**

Within the current, seven-year planning horizon (BY-2006 through BY-2012), VA will implement significant portions of its target architecture vision through the evolving IT project portfolio and through specific, EA initiatives. The Target Transition Plan, in the following section, addresses VA's approach for achieving this transform.